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CRITERIA FOR SELECTING INTER-SUBREGIONAL PROJECTS AIMED AT STRENGTHENING ECONOMIC INTEGRATION IN AFRICA

INTRODUCTION

A. The concept of subregion

1. Within the African continent itself, referred to as region in United Nations parlance, a subregion is defined as a legal entity superimposed on a given geographical area, for example Central Africa, East Africa, West Africa and North Africa.

2. The legal nature of a given subregion derives from the fact that several countries are inter-linked by a legal instrument such as a treaty or a convention. Hence, several global economic entities (community) or sectoral bodies (commission) may co-exist within the same subregion.

3. Thus, in Eastern and Southern Africa, PTA, SADCC and IGADD co-exist; in Central Africa, it is ECCAS, UDEAC and CEPGL; in West Africa, ECOWAS, CEAO, MRU, the Council of the Entente, the Liptako-Gourma Authority, the Organization for the Development of the River Senegal (OMVS), the Niger Basin Authority (NBA) and many other subregional sectoral or technical bodies.

4. Certain countries also belong to various subregional bodies, for example, Burundi and Rwanda, which are members of both PTA and ECCAS. Also, two countries (Cameroon and Chad) of the Lake Chad Basin Commission (CBLT) are members of ECCAS while the two others (the Niger and Nigeria) are members of ECOWAS.

B. The search for a definition

5. This is the reason why in CBLT, all projects of the Commission are, ipso facto, inter-subregional, whereas in the case of Burundi and Rwanda, the superimposition of two other subregional bodies such as CEPGL, whose third member country, Zaire, is a member of ECCAS and the Kagera Basin Organization (KBO) whose two other members, Uganda and the United Republic of Tanzania, are members of PTA.

6. Thus, a project involving Burundi and Rwanda may come under the following: a Burundi-Rwanda bilateral project; a CEPGL project; a KBO project; an ECCAS project; a PTA project.

7. Each of the economic integration bodies is also known to have defined its objectives and adopted its own approach towards attaining them. Such an approach involves a programme made up of projects.

8. Apart from the purely national projects, there are also regional projects involving the whole continent. These are truly inter-subregional projects.

9. There are also subregional projects which involve specific subregions.

10. Given the above facts on the subregional concept, the complexity of an inter-subregional project can be seen through the example given above concerning Burundi and Rwanda.

11. An initial theoretical approach would be to define an inter-subregional project as an intersection between regional and subregional projects.

12. This definition may seem satisfactory intellectually, but the concept of intersection is, first of all, geographical and then applicable to various areas of common interest to two or more subregions. Yet each project should be translatable into a concrete and executable form. Furthermore, a project is generally expected to bring changes to the current situation.

13. Another more commonly used approach is to define a project - whatever it may be - using a set of criteria; this is known as the normative approach. This approach certainly meets, more appropriately, the practical requirements of a project, namely the possibility of being evaluated from the physical and financial

points of view. This calls for a more detailed analysis of the specific characteristics of each category of project.

14. In this respect, it is necessary to make a quick review of the criteria used in the preparation of two regional programmes, namely the Industrial Development Decade for Africa and the Transport and Communications Decade in Africa, as well as some other regional and subregional experiences. Without doubt, the opposition of these two types of experiences will enable us to draw some conclusions before attempting to establish a set of criteria to serve as a guide for identification and choice of inter-subregional projects.

I. ANALYSIS OF SOME CURRENT EXPERIENCES

15. This part will review, one after the other, two regional programmes and the experiences of regional and subregional institutions in the establishment of criteria for selecting projects.

A. Regional programmes

1. The Industrial Development Decade for Africa

(a) The Decade objectives

16. The programme for the Industrial Development Decade for Africa, 1980-1990, was jointly prepared by Economic Commission for Africa (ECA), the Organization of African Unity (OAU) and the United Nations Industrial Development Organization (UNIDO), and was adopted by the highest authorities of the OAU as well as the United Nations General Assembly.

17. The major aim of the programme is to assist African States to attain the objectives of the Lagos Plan of Action through a speedy industrialization, given the fact that industry is considered to be the driving force for growth and general development.

18. In fact, the programme constitutes a frame of reference for assisting member States and intergovernmental organizations (IGOs) to draw up their respective, but complementary, industrialization programmes.

19. The proposed approach lays emphasis on pilot industries and strategies based on the availability of raw materials and other resources in each country/subregion, and on a multinational approach for the development of industries thus identified.

20. This strategy should lead to the emergence of an interconnected production system comprising mutually supportive industries that are capable of producing a decisive impact on the other related sectors in the course of their development.

(b) Criteria for selecting the Decade projects

21. The established criteria for selecting the projects of the Industrial Development Decade for Africa, 1980 to 1990 are:

(a) Basic criteria

(i) contribution to the achievement of food self-sufficiency by the peoples of the subregion and region;

(ii) supply of inputs for the selected priority sectors in the Lagos Plan of Action, namely food, transport and communications and energy;

(iii) encouragement of an effective integration and links with other industrial and economic activities as well as infrastructure;

(iv) using and improving to a maximum such African human and natural resources as raw materials and energy in order to enable the subregion, other African countries and non-African countries to benefit from them;

(v) production of intermediate goods for use in processing and manufacturing in a growing number of established or planned industries, or of project goods, particularly those used in the production and processing of food commodities and those used in the construction, textiles, energy, transport and extraction industries;

(vi) meeting, first and foremost, directly or indirectly, the basic needs of the peoples of the subregion and, where necessary, of other African countries;

(vii) using: economies of scale, a complex technique, or improving the existing technique, substantial investments, and one or two markets outside the individual countries of the subregion;

(viii) offering a framework for cooperation, particularly among African countries, in such areas as long-term supply/purchase of raw materials and intermediate and finished goods, as well as subcontracting, barter and joint-ventures;

(ix) contribution to reduction of the effects of landlockedness and, generally, dependence on the outside world.;

(b) Additional criteria

(i) offering one or several relative advantages on one or several similar existing or planned projects in other African or non-African groups of countries, particularly with regard to raw materials, energy and the necessary infrastructure;

(ii) completing related project(s), where there are production units in the subregion;

(iii) attracting foreign exchange through export of their products and improvement of their raw materials;

(iv) working towards the readaptation and streamlining of the existing production units;

(v) replacing, when necessary, synthetic materials by natural materials, particularly renewable ones.

(c) Approved projects and their execution

22. Through these criteria, 84 priority projects and 38 support projects were selected in the pilot and strategic industrial subsectors approved under the Decade programme, namely the agro-industry, the mechanical and chemical industries, the construction materials industry and metallurgy.

23. The distribution of these projects by subsector is as follows:

Subsector	Eastern and Southern Africa	Central Africa	West Africa
Agro-industry	-	7	7
Mechanical industry	5	3	14
Chemical industry	5	9	9
Construction materials	5	4	4
Metallurgy	3	3	6
Sub-total	18	26	40
Support project	9	9	20
Total	27	35	60

24. The support sectors are agriculture, energy and transport and communications. The other support projects are for human resources development, financial resources mobilization, techniques transfer and adaptation and strengthening of such institutions as the IGOs.

25. An evaluation of the Decade carried out in 1988-1989 showed the level of execution of the projects to be very low.

26. In fact, out of a total of 84 priority projects, only five could be executed and often as national projects. This represents about 6 per cent of the rate of execution, as shown in the table below:

	Eastern and Southern Africa	Central Africa	West Africa
Executed project	2	2	1
Projects under execution	4	10	3
Projects under study	6	13	34
Withdrawn/suspended projects	6	1	2
Total	18	26	40

27. The support projects had a better rate of execution. For example, three out of the nine support projects in Eastern and Southern Africa were executed.

(d) Conclusions

28. The mid-term evaluation of the Decade does not, in any way, question the criteria used in selecting the priority projects. In contrast, these same criteria are considered relevant, since they have been approved for selection of projects under the revised programme of the second Decade.

29. The evaluation identifies other factors which have negatively affected execution of the projects. Some of the major factors are given below:

(a) The planning scope used favours short- and medium-term considerations to the detriment of longer-term considerations;

(b) Absence of a clearly defined industrialization policy;

(c) Ineffectiveness of the project-by-project approach adopted for the mobilization of financial resources;

(d) Weakness or lack of national and subregional coordination mechanisms;

(e) Lack of involvement of the private sector: promoters, chambers of commerce and financial institutions.

30. All these have led to the proposed strategy for a speedy implementation of the Decade programme being simply to remove obstacles at the national and subregional levels alike.

2. United Nations Transport and Communications Decade in Africa (1978-1988)

(a) Objectives

31. The United Nations Transport and Communications Decade in Africa (1978-1988) was proclaimed by the African Ministers of Transport, Communications and Planning and the United Nations General Assembly in 1978.

32. The Decade strategy aimed at the setting-up of an integrated transport and communications network throughout the African continent, placing particular emphasis on harmonization, coordination and modernization of this network aimed at sustaining the development of the major industrial sectors, agriculture and trade.

33. The overall objectives of the Decade, 11 in number, are outlined below:

1. Promote the integration of transport and communications infrastructure with a view to increasing intra-African trade;

2. Ensure the coordination of the various transport systems in order to increase their efficiency;

3. Open up land-locked countries and isolated regions;

4. Harmonize national regulations and reduce to the bare minimum physical and non-physical barriers with a view to facilitating the movement of persons and goods;

5. Stimulate the use of local human and material resources;

6. Standardize networks and equipment;

7. Research and disseminate techniques appropriate to the African context in relation to the establishment of transport and communications infrastructure;

8. Promote African industry particularly the manufacture of transport and communications equipment;

9. Mobilize technical and financial resources required for the expansion and modernization of transport and communications infrastructure in Africa;

10. Restructure the transport and communications sectors to ensure that African trade with the rest of the world takes place under conditions most favourable for the continent; and

11. Define subregional and regional development policies and master plans for each transport mode, as well as a global master plan integrating all the transport modes and harmonize national transport and communications policies and plans at subregional and regional levels.

(b) Criteria for selecting the Decade projects

34. The projects of the first Decade were choosen through the above-mentioned objectives, using the following order of priorities: regional projects; subregional projects; national projects with subregional impact; and purely national projects.

35. During the drawing up of the second phase in 1984, other considerations were added concerning, in particular: maintenance and rehabilitation projects; training and technical assistance projects; and inter-State links projects.

36. These criteria were used for all transport modes: roads, railways, maritime transport, ports, air transport, inland water transport, multimodal transport as well as communications, including telecommunications, broadcasting and postal services.

37. With the criteria given above, 1,091 and 1,048 projects were approved during the first and second phases, respectively.

(c) Execution of the approved projects

38. According to an evaluation made by a group of independent consultants, of the 1,091 projects, 300 projects had been executed by the end of the first phase (1978-1983), representing about 27 per cent rate of execution. During the second phase (1984-1987), 164 projects had been completed out a total of the 1,048 projects approved at the beginning of the second phase, representing a 15 per cent rate of execution.

39. The evaluation also covered the level of mobilization of financial resources for the objectives. The result was concentration of efforts on three out of 11 objectives of the Decade which are summarized in the table below:

Objective	Total financing received	Percentage of financing received from African States	Percentage of external financing received
Objective 1	37	50	50
Objective 9	37	48	52
Objective 3	14	32	68
Others	12	n.a.	n.a.

40. It should, however, be recalled that objective 1 concerns promotion of the integration of infrastructure, objective 3 opening up of land-locked countries and objective 9 mobilization of internal and external resources. Finally, there were some deficiencies in the evaluation with regard to the design, planning and execution of the first Transport and Communications Decade programme, namely:

(a) Lack of consistency in the criteria for project selection, resulteding in the inclusion, especially during the first phase, of a disproportionate number of national projects in relation to regional and subregional projects;

(b) An overall strategy covering a list of projects, but having neither a true plan of action nor a coherent programme reflecting the expected results;

(c) A low level of coordination and harmonization of activities of the various organizations involved;

(d) Lack of a clear definition of measurable development indicators.

41. To make up for these inadequacies, stricter criteria were established for selecting projects under the second Decade (1991-2000). To be approved, projects must, thereafter meet the following conditions:

(a) Make for the successful execution of one or several objectives of the second Decade programme;

(b) Be included in the national development plans or the priority programmes, with the highest priority given to regional and subregional projects, followed by national projects having a subregional or regional impact;

(c) For the infrastructural projects, they should be socially, economically and technically feasible and yield other tangible benefits, while being compatible with the environmental programmes;

(d) There should be a sufficient and appropriate institutional capacity for the execution of the projects;

(e) The ordinary expenditures as well as the local components of the capital expenditures should be clearly evaluated and their financing adequately provided for.

42. The regional and subregional projects should, in addition, be included in the work programme of an intergovernmental organization, a specialized agency of the United Nations or a similar organization. The countries concerned should have participated in their preparation and expressed their commitment to the execution of the projects. Furthermore, the project should involve more than one country and promote subregional cooperation and integration.

43. In addition to this, the second Decade programme is no longer limited to the determination of objectives; but for each approved objective, the programme indicates the types of projects that could meet this objective, as well as the corresponding activities. For example, objective 10 is on the establishment and strengthening of interregional links. In order to attain this objective it is necessary to approve projects on:

(a) All transport and communications policy and law harmonization actions;

(b) All subregional and regional coordination and cooperation actions for the management of national transport companies of the same subsectors;

(c) All studies, promotional activities and other activities aimed at establishing transport and communications companies for communities.

44. Finally, mechanisms for project submission and report verification were set up at the national, subregional and regional levels.

(d) Conclusions

45. The preparation of the second Decade programme mainly dwelt on ensuring that the projects that would be approved under the programme had the greatest chance of succeeding. Consequently, particular emphasis was laid on regional and subregional coordination and harmonization directly involving the institutions concerned, the setting up of project submission and follow-up mechanisms at all levels as well as adequate financing, taking into account recurrent expenditures.

B. Regional and subregional institutions

46. As mentioned earlier in this document, each geographical subregion contains a rather high number of global integration or purely sectoral organizations. Africa as a whole has about 200 of such organizations, with the largest number in West Africa.

47. It would be difficult to compile a list of the types of these organizations and to examine their project evaluation criteria in this document. Common to these organizations is financial difficulty caused by member States not paying their contributions regularly.

48. Some of these organizations, especially the technical ones, have become specialized institutions of global integration organizations and subregional economic communities. Other regional organizations which are also technical are ECA- and OAU-sponsored institutions.

49. In this document, a quick review will be made of ECA-sponsored institutions, on the one hand, and the integration organizations, on the other, given their experience and their close working links with ECA.

1. ECA-sponsored institutions

50. The ECA-sponsored institutions, about 20 in number, are divided into the following five subgroups: financial and banking services: 3; land resources development: 5; industrial development: 5; development planning and management: 4; and trade and transport: 5.

51. The major objective of these institutions is to provide, each one in its field of operations, high quality services to member States in order to strengthen Africa's technical, technological and management capacities, thus contributing to its collective self-sufficiency.

52. Within a group and each subgroup, cooperation is based on complementarity, without much formality. In order to promote this cooperation, the Conference of ECA-sponsored institutions was established more than 10 years ago.

53. Initially, a liaison bulletin whose objective was to review the activities of these institutions was launched with ECA support in order to promote exchange of experiences. With time, emphasis was laid on the possibility of jointly carrying out certain activities, especially within the same subgroup. However, the major and general constraint has remained financing.

54. Thus, during the eleventh meeting of the Conference, held in April 1991, the authorities of these institutions decided to set up an ad hoc committee to be responsible for maintaining contacts with ADB. The committee was mandated to carry out the activities outlined below:

(a) To discuss with ADB ways and means of strengthening cooperation between the Bank and the institutions with a view to increasing its role in the establishment of an African institutional capacity;

(b) To discuss with ADB the modalities for using the services of these institutions.

55. Many institutions devote themselves to training and consultation activities. Their ultimate aim is to create credibility with the member States so as to make them request their services. This would partly resolve their common problem of insufficiency of resources to meet their needs.

56. The ECA-sponsored institutions have yet to develop their own cooperation project selection criteria among themselves, but it is possible that this will be done in the near future.

2. Integration organizations

57. Limiting oneself to non-sectoral global integration organizations that are of major importance to the African continent, given the recent establishment of the African Economic Community, the following groupings may be briefly mentioned: in Eastern and Southern Africa, PTA and SADCC; in Central Africa, ECCAS, CEPGL and UDEAC; in West Africa, ECOWAS, CEAO, UMOA and the Mano River Union; and in North Africa the Maghreb Union.

58. Each of these organizations, it should be noted, has a work programme consisting of projects, but not all these organizations have to date prepared detailed project selection criteria for various reasons.

59. First of all, many of them have started adopting a trade liberalization programme comprising, inter alia:

(a) The adoption of a list of original tradeable products within the community and a preferential tariff for such products;

(b) The adoption of a timetable for the setting-up of liberalization mechanisms, as the establishment of a preferential tariff is considered a first step towards the creation of a subregional customs union.

60. Then, at a given moment of their existence they have requested and benefitted from international technical assistance. Under these circumstances, the projects contained in the work programmes often respond more to the criteria fixed by the donors than to those developed by the organizations themselves.

61. For example, the criteria for multisectoral assistance projects for ECCAS, ECOWAS and UDEAC are developed by UNDP in consultation with ECA and serve as a basis for selecting projects contained in these programmes, given the fact that these projects take account of all the priorities established by the decision-making bodies of these organizations.

62. However, with time, a number of these organizations have managed to develop their own project selection criteria. On examination, these criteria have been seen to be very similar. This is, without doubt, attributable to the borrowings by all from the providers of technical assistance who, in turn, draw on the same source for the technical criteria.

63. Differences in approach specifically arise. Thus, a review of the various approaches easily distinguished two symmetrical approaches: the project-by-project approach and the programme-by-programme approach; the others are a combination of approaches between these two extremes. To illustrate this, the two approaches are examined below.

A. Project-by-project approach

64. The supporters of this approach think that integration should be based on concrete achievements, and the project is exactly based on this assumption. The advantage is that it has, right from the start, avoided setting up a large bureaucracy. Furthermore, it is based on an equitable distribution of responsibilities, for

the execution of the projects, among the member States themselves and with the subregional coordination structure.

65. After defining the global objective, one of the subregional organizations supporting this approach considered it indispensable to establish, for each approved priority sector, specific criteria to meet the global objectives and specific needs of the sector concerned. The global objectives are as follows:

(a) To establish the foundation for a true and equitable integration;

(b) To cooperate in the mobilization of resources for the implementation of national, inter-State and subregional policies.

66. The selection criteria comprise genuine criteria as well as procedures for formulation and approval of community procedures.

(a) Project selection criteria

67. For a project to be approved as a subregional project, it must satisfy the following questions:

(a) What is the relationship between the project and the general subregional objective? In particular, how will the project contribute to reducing dependence or to strengthening subregional self-sufficiency in the specific sector?

(b) Was the project conceived to meet the felt needs of the people or is it simply a good idea coming from a stranger? Has it been discussed directly with the countries concerned before being presented to a subregional meeting? Is there enough information to be used to make an objective decision on the project?

(c) Does the project involve more than one country? If not, of what subregional importance is it?

(d) What relationship is there between the subregional project and corresponding national projects/programmes? In other words, are these projects mutually supportive and what order of priority has been accorded them?

(e) Is the project part of a coherent subregional programme or is it simply the result of a circumstantial initiative?

(f) What are the subregional human and material resources planned for the implementation of the project and what efforts have been made to mobilize national and subregional resources?

(g) Has an executing agency or national enterprise been identified for the implementation of the project?

(h) Have enough resources been provided to cover the cost of execution of the project?

(i) Have enough arrangements been made to secure an effective coordination once the investments outlay have been obtained?

(j) Has consideration been taken of the long-term manpower requirements of the project?

(k) Can the project be extended in order to increase its subregional impact?

(b) Project formulation and approval procedure

68. Project formulation procedures are based on a uniform presentation indicating the objectives, the description corresponding to the criteria given above and the execution modalities. Such a formulation may be made either by a member State, a sectoral coordination unit or both.

69. The approval of the project is based on a procedure comprising the following stages:

(a) Presentation to the sectoral coordination unit;

(b) Evaluation by the coordination unit;

(c) Distribution to member States;

(d) Presentation to the sectoral experts; and

(e) Consideration and approval, first by the sectoral Ministers and then by the Council of Ministers.

70. Also planned are procedures for maintaining contacts, transacting business and monitoring the project's execution.

(c) Conclusions

71. A review of the approach adopted by this organization for the formulation, approval, execution and monitoring of projects shows it to be both a global and wise approach. In fact, it strives at each moment to reconcile national interest with subregional interests and to ensure an effective coordination between the authorities at both levels. It also gives particular attention to all aspects of project execution, namely financing, human resources, business transaction, monitoring and evaluation. This no doubt explains the relative success of this institution when compared with many African integration organizations.

B. Programme-by-programme approach

72. This approach is based on the definition of a minimum programme which, when fully carried out, will serve as the launching pad for all other development and integration actions.

(a) Development objectives

73. One of the subregional integration organizations which support this approach has defined a global development strategy which is outlined below:

(a) Reconciliation of the rate of development with the true ability of States;

(b) Reduction of the vulnerability of national economies vis-à-vis the outside world and search for self-reliant development through an adequate redirection and transformation of socio-economic activities and structures;

(c) Popular participation in the taking of decisions concerning development of the peoples environment, as well as in human resources development and promotion actions;

(d) Strengthening of food self-sufficiency and security strategies;

(e) Self-reliant development with priority to agriculture;

(f) Consolidation of development achievements and re-establishment of productive capacities;

(g) Selection and channelling of investments to productive sectors and development of local resources;

(h) Planning of an integrated development; and

(j) Involving private capital in the development effort.

74. On the basis of this global strategy, specific objectives and strategies are defined in each sector for rural development, industry, infrastructure and human resources.

(b) Minimum programme

75. Within this strategy, the minimum programme has only one objective, namely collective food self-sufficiency, which is based on two facts: provision of production inputs and minimum production activities.

(i) Provision of production inputs

76. For plant production, it is planned to encourage national grain, market gardening and fodder seeds. Maximum use will be made of existing capacities in the provision of fertilizers and pesticides before plans are made to establish new production units.

77. For animal production, it is planned to produce sires for the zebu, borgou, n'dama, the ovine/caprine and the porcine races through specialization by existing national centres. National vaccine production centres should also be made to specialize.

(ii) Production activities

78. The production activities are outlined below:

(a) Plant production:

(i) rehabilitation of rice growing areas in all the countries;

(ii) support to production of other cereals for regular supply of selected seeds and other agricultural inputs to producers;

(iii) establishment of national and regional security stocks and regulation of prices;

(iv) reforestation aimed at checking desertification;

(b) Animal production:

(i) modernization of national abattoirs;

(ii) setting up of national cold storage facilities;

(iii) establishment of a national sea-fishing company;

(c) Consolidation of achievements:

(i) rehabilitation of the textile sectors at the subregional level, with specialization in specific types of products;

(ii) rehabilitation of the agricultural machinery sector, with the possibility of assembling certain equipment;

(iii) streamlining of the leather and skins sectors with local development of products of the subregion;

(iv) promotion of manufacture and use of manually driven pumps produced in the subregion.

C. Follow-up measures

79. The follow-up measures are aimed at securing the success of the programme and at establishing a coherent physical area in addition to the existing monetary area; it is based, inter alia, on:

(a) A coordinated programming of communication infrastructure and or simplification of transit procedures among countries of the subregion;

(b) Drawing up of a subregional investment code;

(c) Harmonization of agricultural policies, especially with regard to prices of production inputs and producer prices;

(d) Sensitization of the people to the subregional integration programme;

(e) Inclusion of subregional integration strategies and projects in national plans;

(f) Concomitant preparation of annual budgets and adoption of the same financial year; and

(g) Adoption of the same period for national plans.

(iii) Programme execution structures

80. The responsibility for programme implementation is divided into two: national and subregional.

(a) National coordinating committees

81. A national coordinating committee is chaired by the Minister of Planning and comprises Directors-General of the Ministries of Planning, Agriculture and Livestock, Industry, Public Works, as well as high officials of the Ministry of Finance and the Ministry responsible for State corporations.

81. The functions assigned the national coordinating committees in the execution of the minimum programme are to:

(a) Centralize technical and economic data, particularly of project feasibility and execution study, indispensable for the compilation of various information;

(b) Contribute actively to the search for financing by effectively participating in the preparatory work and in the round-table of donors;

(c) Sensitize national and foreign economic operators to participate more actively in the implementation of the programme;

(d) Monitor technical and financial execution of the programme and write periodical reports for donors and governments;

(e) Manage the programme through information exchanges among the coordinating committees.

(b) The subregional coordination structure

83. The subregional structure is mainly responsible for the successful implementation of the programme. It has a dual role: technical and financial.

84. Technically, it will assist in the preparation of feasibility studies and in the technical compilation of reliable data. It is also responsible for the technical supervision of projects.

85. As for the finances, the subregional structure helps in the mobilization of external resources, the carrying out of studies and the financing of projects.

(iv) Conclusions

86. The originality of the approach adopted lies in the fact that it favours the "programme" aspect over the "project" aspect. It defines a "prototype programme" in which all projects will be involved through certain conditions.

87. Project instruction is shared between national coordinating committees and the subregional body responsible for the overall coordination.

88. The minimum programme has only one aim: food self-sufficiency on which all the actions to be undertaken in the related sectors are based.

89. This approach facilitates planning and implementation of such common policies as the establishment of a common grain area, a livestock and meat community and even the defence of a common tariff.

90. In addition to this, the financing of a project does not depend exclusively on the outside world since the subregional coordination structure is the centre-piece of project preparation and implementation. It is also a major asset for resource mobilization.

91. Finally, it should be noted that this programme was launched only recently, such that it is impossible to evaluate the results. But even so, the strong appeal of the approach is beyond any doubt.

III. SELECTION OF INTER-SUBREGIONAL PROJECTS

92. From the analysis of the regional and subregional experiences, it is possible to define a typical structure for the selection of projects; and the component elements of such a structure are:

(a) A general reference framework,

(b) Priority cooperation areas;

(c) Genuine selection criteria;

(d) Project formulation and approval procedures; and

(e) Actors involved at each level of the process.

1. Reference framework

93. In the current context, the establishment of the African Economic Community is the true reference framework. The Treaty establishing this Community, which was prepared two years ago, was signed in June 1991 in Abuja, Nigeria.

94. The objectives of the treaty as contained in article 4 of the Treaty is summarized as follows:

(a) To promote the economic, social and cultural development as well as the integration of African economies;

(b) To establish at the continental level, a framework for the development, mobilization and utilization of human and material resources aimed at a self-reliant development;

(c) To promote cooperation and development with a view to enhancing the living standards of African peoples, to promote and maintain economic stability, to establish close and peaceful relations among member States and to contribute to the progress, development and economic integration of the continent;

(d) To coordinate and harmonize policies of existing and future economic communities with a view to a gradual establishment of the Community.

95. It is planned to establish the Community in six stages over a period of 34 years, and involving the existing economic communities at each stage.

96. Thus, the first phase is for strengthening the institutional framework of the existing communities.

97. The second stage is for strengthening regional and subregional sectoral integration; and coordinating and harmonizing activities of the existing economic communities.

98. The third stage is for setting up a customs union within each subregional community.

99. A permanent dialectic thus develops between the subregional communities and the African Economic Community being established. By strengthening one another, the subregional communities also strengthen the foundations and pillars of the continental Community. This logic is based on the maintenance of vertical integration relations between the existing communities and the African Economic Community as well as on the maintenance of mutually strengthening relations among themselves by rationalizing and harmonizing their activities.

(a) Vertical integration

100. The vertical integration of the existing subregional communities with the African Economic Community can be done, inter alia, through the seven specialized technical committees set up within the African Economic Community and similar existing or planned structures within the subregional communities.

101. The seven specialized technical committees will be responsible for:

(a) Rural economic and agricultural matters;

(b) Monetary and financial matters;

(c) Trade customs and immigration;

(d) Industry, science and technology, energy, natural resources and the environment;

(e) Transport, communications and tourism;

(f) Health, works and social affairs;

(g) Education, culture and human resources.

102. The technical committees are responsible for preparing, each one in its field of operation, Community projects and programmes, monitor their execution and secure coordination with subregional communities.

(b) Horizontal integration

103. Here, emphasis is laid on those aspects of coordination, harmonization and execution that are common to certain projects and programmes between sister communities, whereas within each community efforts will be made to rationalize the activities of the sectoral and technical IGOs which co-exist in it.

104. The technical structures of the subregional communities will therefore be requested to act in both directions and will certainly be required to re-adapt themselves in certain cases.

2. Areas of cooperation

105. The aim of the subregional projects is, without doubt, to strengthen the existing economic communities, thus contributing to the consolidation of the African Economic Community.

106. These projects should therefore be selected among the priority programmes approved within the communities and the main African Economic Community. The programmes may be both regional and subregional and will often have national components.

107. Programmes such as the Industrial Development Decade and the Transport and Communications Decade in Africa, which are both in their second phases and whose criteria have already been briefly discussed, have already been established. Such criteria also apply to other sectors, if not entirely, at least partly.

108. Among the other major sectors involving inter-subregional and subregional projects are the following:

(a) Development of river basins;

(b) Development and protection of marine resources;

(c) Interconnection of electricity networks;

(d) Coastal shipping;

(e) Development of primary industries, particularly those requiring heavy investments, complex technology, skilled manpower - in short, all those requirements that are beyond the capacity of a single country and even several countries put together. These are, among others:

(i) establishment of primary methodological and mechanical industries, including: electrical and electronics industries; chemical and petro-chemical industries; forest resources industries; bio-technology industries;

(ii) other areas concerning the environment and which cannot be efficiently dealt with on a purely national basis, such as pollution, desertification or deforestation.

3. Criteria for selecting inter-subregional projects

109. On the basis of the framework and the priority areas mentioned above and in light of the earlier-mentioned criteria used for selection of regional and subregional projects, it is possible to propose normatively and non-exhaustively some criteria for selection of inter-subregional projects. The latter should:

(a) Involve at least two subregional communities: As stated earlier on, the subregions are legal entities in which certain activities take place as ruled. For example, subregional projects which are the result of discussions among members of the same subregional entity. But, an inter-subregional project indeed sets in motion mechanisms which go beyond or give an added dimension to those already in existence;

(b) Help achieve the objectives of these communities and the African Economic Community: This takes place when an inter-subregional project emanates from a public or private initiative within the context of well-defined objectives;

(c) Help to strengthen these communities and the African Economic Community: Implementing projects in accordance with the set objectives results in the mutual strengthening of these communities; for example, the free movement of persons and goods helps to promote trade and cultural exchanges;

(d) Encourage programme rationalization and harmonization in order to promote horizontal and vertical integration: While it is true that communities have similar programmes in the major areas of integration, namely trade liberalization, food security, industrial development, transport and communications and human resources development, when carrying out these programmes needs and inadequacies arise which require foreign assistance. For example, an interconnection within a subregion may open possibilities for interconnection with the neighbouring subregion and, from subregion to subregion, the entire continent may become interconnected;

(e) Promote development of the major priority sectors: As has been stated above, the major priority sectors are the same for all the communities. Joint execution of projects by two subregions therefore makes for harmonization, rationalization and economy of scale. For example, the studies carried out separately on coastal trade in Central Africa and West Africa has shown the need for harmonization. Pooling of resources which result from this harmonization will make it easier to execute a project.

110. Drawing up a normative criteria alone is not enough to guarantee the success of projects; rather, a number of follow-up measures should be taken in addition.

4. Follow-up measures

111. The follow-up measures mean related conditions that will help the project to succeed. In this regard:

(a) The formulation of projects involving the African Economic Community and the existing subregional communities should be based on a framework which could be prepared under the auspices of the secretariat of the African Economic Community with the help of the other communities;

(b) Project formulation and presentation should be sanctioned by the secretariats of the communities concerned;

(c) The project should first obtain the approval of the decision-making authorities of each community (the summit and the Council of Ministers) in order to secure the effective participation of member States in the various phases of implementation;

(d) An executing agency should first be identified and/or there should be agreement on the sharing of responsibilities among the communities concerned the IGOs and member States;

(e) Joint efforts should be made to negotiate the financing of the project studies and investments alike;

(f) National public and private promoters should, as much as possible, be involved in the project, especially during the investment phase.

5. Some examples

112. To illustrate the general principles mentioned above, it may be possible to encourage cooperation agreements among countries of one or several subregions within the context of the industrial development projects. Such agreements may cover a wide range of products and take different forms, such as joint-venture and subcontracting. Examples of these would include the following:

(a) Provision of raw materials, intermediate products and energy. The Edea plant in Cameroon manufactures shaped utensils and packing cases from aluminium imported from Guinea. Also, in the context of the Industrial Development Decade for Africa, ZISCOSTEEL of Zimbabwe should improve and diversify its production in order to supply such intermediate products as iron sponges and steel ingots to a number of plants which manufacture finished products, such as the Maluku plant in Zaire;

(b) Planning to obtain a minority share in the capital and management of technologically and managerial complex enterprises as part of the process of establishing multinational enterprises;

(c) Awarding of subcontracts for manufacture of spare parts for vehicle assembly in Nigeria, Kenya and elsewhere;

(d) Pooling of resources for joint implementation of training, research and development programmes. In this context, such regional and subregional training and research institutions as ARCEDEM, ARCT and RECTAS should play a major role;

(e) Increased use of existing capacities by extending the enterprise market. The GECAMINES Company in Zaire is known to have operated for a long time on a self-sufficiency policy such that its real capacities are underutilized. Agreements concluded with some neighbouring countries for the supply of finished and semi-finished goods may, by merely extending the markets, help the enterprise to make full use of its capacities.

113. Abundant opportunities exist for cooperation, but are relatively unexploited. This is due to the predominance of purely national concerns over others, and also due to extrovert cooperation attitudes which

favour North-South cooperation to the detriment of South-South cooperation. There is a need for a change of attitude which should be stimulated by regional, subregional, sectoral and multisectoral organizations.

6. Conclusions and recommendations

114. This document has, after reviewing some experiences, tried to establish a framework within which inter-subregional projects should come.

115. There is no doubt that much work has yet to be done, particularly in the setting-up of the institutions of the African Economic Community.

116. This framework should therefore be considered efficiently, and should be more explicit given the evolution within the intergovernmental and other organizations assist in strengthening the African Economic Community.

117. The success of inter-subregional projects will, no doubt, depend on the first choices to be made from among the priority areas, already known, to form the cooperation programmes between the African Economic Community and each of the existing communities as well as within these communities themselves.

LIST OF DOCUMENTS CONSULTED

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3. SADCC Secretariat, Guidelines for Selection of Industrial Projects.

4. BOAD, Etude sur l'harmonisation des plans de développement des pays de l'UMOA et programme commun d'Actions, juin 1988.

5. OAU, Treaty establishing the African Economic Community, Abuja, June 1991.

6. CEPGL, Plan quinquennal de développement économique et social de la CEPGL, 1990-1991.

7. Projet d'assistance multisectorielle à la CEDEAO (RAF/85/047), CEEAC (RAF/88/049) et UDEAC (RAF/89/061).

ACCRONYMS USED

MBA	Niger Basin Authority
ADB	African Development Bank
BOAD	West African Development Bank
LCBC	Lake Chad Basin Commission
ECA	Economic Commission for Africa
CEAO	Economic Community of West Africa
ECOWAS	Economic Community of West African States
CEPGL	Economic Community of the Great Lakes Countries
IDDA	Industrial Development Decade for Africa
IGADD	Intergovernmental Authority on Drought and Development
MRU	Mano River Union
IGO	Intergovernmental organizations
OMVS	Organization for the Development of the Senegal River
OAU	Organization of African Unity
SADCC	Southern Africa Development Coordination Conference
UDEAC	Central African Customs and Economic Union
UNTACDA	United Nations Transport and Communications Decade in Africa

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REPORT ON THE EFFECTIVENESS OF REGIONAL AND SUBREGIONAL DEVELOPMENT PROJECTS IN THE AGRICULTURAL AND RURAL SECTOR, WITH PARTICULAR EMPHASIS ON ENVIRONMENT AND SUSTAINED DEVELOPMENT

INTRODUCTION

1. The agricultural and rural sector is very important in Africa and enormous efforts have been made to develop it, not only at the national level, but also at the regional and subregional level. However, despite this, the growth of the sector has not kept pace with population growth: according to FAO, the population is increasing by 3.3 per cent per year, but agricultural output by only 1.5 per cent per year. This situation is very worrying and threatens to undermine any lasting development in the long-term, because all these factors tend to lead to a running-down of the natural resources and productive capacity of the continent.

2. Africa must now address itself to reversing these trends and establishing agricultural and rural development projects which are more efficient and are able to feed a fast-growing population without damaging the ecological environment. This means that any agricultural and rural development project should be analyzed in terms of whether it yields enough agricultural output and helps to conserve the natural resources of the continent. This is the only way to guarantee sustained development.

3. Indeed, for development to be sustainable, it is necessary, according to the FAO definition, to manage and conserve natural resources and guide technical and institutional changes in such a way as to satisfy the needs of present and future generations. In other words, in the sectors of agriculture, forestry and fisheries, land, water, fauna and flora must be preserved and husbanded in ways which will not endanger the environment and are technically suitable, economically viable and socially acceptable.

4. In this spirit, it is necessary to establish, or use all means to promote projects which are more compatible with sustained development and environment friendly.

5. It should be noted here that such projects:

(a) Must have both regional, subregional and national dimensions and their effectiveness will depend on the role played by the actual participants who, as this is Africa, will for the most part be living in rural areas;

(b) Can be environment-friendly and contribute to lasting African development only if they genuinely further rural development as a whole and allow the communities concerned to participate.

6. At issue are the extent to which communities are likely to participate in the design, execution and evaluation of the projects and to share the benefits; the extent to which such projects will improve their situation and how the projects will help to increase their capacity to embark on a sustained and lasting process of development that respects the environment.

7. In fact, many of the projects designed and implemented in the recent past have not taken full account of these concerns. The present report analyzes fundamental aspects which have been overlooked since the design and implementation of such projects in Africa and rightly makes suggestions for improving their effectiveness.

8. It is for this reason that the report insists on the need for a suitable policy framework and improved project-studies which will take account of potential local markets as well as markets abroad; on the strengthening of linkages between projects and related programmes and other sectors; on better and more efficient management, made possible by the participation of interested groups, improved administrative apparatus and genuine support from the government; and on the protection both of the environment and of rural communities.

9. Above all, this report is addressed to funding agencies and planners (or African decision-makers) generally responsible for the design and preparation of agricultural development projects. In addition, as it forms an integral part of a number of activities in the work programme of the Joint ECA/FAO Agriculture

Division of ECA [sub-programme 3(b)(i), for the 1992-1993 biennium], it will be submitted to the Conference of African Ministers of Planning, the supreme policy organ of ECA, for information and appropriate action.

10. Finally, this report is built around the following two major chapters:

(a) The inadequacies of the orthodox framework of agricultural project design, implementation and evaluation. This chapter is based on a critical look at specific national, regional and subregional projects which were designed and implemented in various parts of the African continent;

(b) The possibilities of improving project-efficiency in the area of regional and subregional development in the agricultural and rural sector, with particular emphasis on the environment and sustainable development.

I. THE INADEQUACIES OF THE ORTHODOX FRAMEWORK FOR PROJECT DESIGN IMPLEMENTATION AND EVALUATION IN AFRICA

A. Overview of the framework (fundamental concepts and aspects which have been overlooked)

1. Project design

11. In general terms, an agricultural development project should be seen as a planned undertaking made up of a series of interdependent and coordinated activities aimed at achieving certain specific objectives within the framework of a socio-economic and ecological environment and a given budget and time-frame.

12. The manner in which the projects are planned and executed should, logically be sequenced as follows (1):

13. The first stage consists of identifying projects having the "potential" to be financed by funding agencies. In this context, regional and subregional groupings or intergovernmental organizations (IGOs), together with funding agencies are usually the source of such projects. The aim of this identification stage is to justify a project and in principle, it should take account of the long-term economic and social plans for the country concerned, as well as focus on a specific sector and on macroeconomic conditions. Unfortunately, in this case, the project does not always complement an existing related programme or an overall development programme, when considered against a well-defined policy framework.

14. Once the project has been identified, a mechanism for planning and formulation can begin to be put in place to study all aspects and to draw up a project document for submission to the funding agencies (2). Normally, the project should be prepared by a team of specialists called together for this purpose and provided with sufficient information and resources for such an exercise. However, this could also be done by a firm of consultants or a technical assistance organization such as the Investment Centre of the Food and Agriculture Organization of the United Nations (FAO) (3).

15. In principle, once the project is prepared, its likely results should be independently and critically examined or evaluated, always taking into account the communities concerned and the given environmental conditions. In this way, the evaluation process would be based on the project plan, but would also include possible new information, if certain data were considered inaccurate or assumptions incorrect. If a project is to be financed by an international lending organization or by a bilateral aid agency, the external lender while understandably insisting on a thorough evaluation, should closely involve the national, subregional or regional partners in the early stages of the project. Above all, this period is intended to determine the economic and financial viability of the project, but while this has always occupied an important place in

project design, equal emphasis could now be given to the project's viability in terms of the ecosystem, society, etc.

16. It is clear that all planning and analysis of a project should primarily consider the best interests of the beneficiaries and therefore the implementation or execution, which directly affects the interested parties, is the most important stage in the project cycle. The implementation stage naturally depends on the overall duration of a project and the investment involved. Its duration should reflect not only material factors, but also how quickly the interested parties adapt to the project and above all how much the project contributes to the related programme. Generally the life of a project should not be decided solely on the basis of financial or economic analysis from the financial backers or according to a time limit, but should be related to a principal aim of development.

17. Last comes the final stage of the project cycle, the stage of retrospective evaluation when a systematic examination of all the reasons for the success or failure of a project should be undertaken in order to provide lessons for the future. Out of this retrospective evaluation, carefully researched recommendations should be drawn up for improving the validity of each aspect of the project's design. This would make for reviewing plans for projects already underway and for planning future projects more effectively.

2. Fundamental aspects which have been overlooked

18. Two recent enquiries into projects financed by the World Bank and UNDP have highlighted certain inadequacies in the orthodox framework for the design, implementation and evaluation of agricultural projects (4). These inadequacies touch on a number of fundamental aspects which have been overlooked and which can be found at the root of the problems experienced by agricultural projects, namely:

(a) A suitable framework

19. The fact that these projects are often limited in time and space and are not carried out in a suitable framework. As a result, they do not define all the aspects of development which must be addressed in order to improve an overall situation within a specific pre-allocated budget.

20. Indeed, until now, the majority of agricultural and rural development projects at regional and subregional level have been designed and executed on an isolated or ad-hoc basis, in response to short-term emergency situations. They often bear no relation to other sectors or the related programme, and are not integrated or even compatible with the sustainable and balanced development of the social, economic and ecological environment. As a result, they are likely to fail. Once their term has been completed or their funding dries up, these projects die a natural death.

21. If anything, the ways of assessing the profitability of the projects have been aimed at identifying and quantifying the combined financial and economic costs and benefits. Basically, the calculation of such costs and benefits has always focused on:

(a) The assessment of the project's financial returns, usually without reference to the rural community, and only at the level of the State - or region or subregion - and based on an examination of State finances (capital, debt, balance sheet, sources of funds, ratio calculations, etc.);

(b) The assessment of economic returns, without examining the overall economic situation, with or without the project; and the calculation of real prices, without allowing for taxes and subsidies;

(c) Cost adjustment (without allowing a percentage for overvaluation of the local currency or using the standard conversion factor; in other words, if the local currency is overvalued, there is a risk of underestimating the cost in foreign currency); note that the cost of labour must be calculated in terms of the

opportunity cost for the economy. An underestimate of costs is also a common phenomenon, frequently caused by a badly prepared project-analysis; the analysts have often made mistakes when using their technical hypotheses to project the rates of reform. According to the same World Bank survey, in one project on deforestation by cash crops, it was estimated that by using more efficient technology, 80 per cent of the planned increase in cultivable land would be achieved in the first year and the remaining 20 per cent would be cultivated over the next four years. This was not the case and resulted in higher costs than had been anticipated;

(d) The assessment of the project's internal profitability rate (for example the rate which cancels out the discounted profit) and evaluation of sensibility analyses.

22. All these financial and economic considerations should normally determine the projects' impact on the related programme or the economic development of the country, region or subregion under consideration while seeking to establish:

(a) Whether the project makes the best use of the available resources;

(b) Whether the priorities of the Government have been taken into consideration; and

(c) The impact that the project will have on the balance-of-payments on income distribution or on food self-sufficiency and food security.

(b) Market research

23. The results of market research should form the basis and framework for the projects. In general, the choice of project has followed the choice of product. No serious consideration of a project should be undertaken unless all the commercial implications have been examined beforehand, in particular the possible effects of the project on the local consumer, and on prices and competition, especially with imported products.

24. Very often, the decision to undertake market-research for a project is prompted only by routine research into the financial returns which is, in most cases, only relevant to the funding agency. Such decisions should spring from the desire to find out more about the local target-groups who, being the majority, constitute the potential market, rather than be confined to the external market; this is even more important when dealing with projects which affect export products or cash crops; at this level, there is a strong tendency to neglect the local market.

(c) Administrative apparatus, institutions and management organization

25. These aspects should occupy an important place in project preparation and analysis. Many questions revolve around these aspects which often overlap and certainly play an important role in the carrying-out of projects implementation.

26. Indeed, administrative procedures are often inadequate and lead to delays in the implementation of projects; to these can be added the frequently-encountered problems of slow and inappropriate decision-making, poor systems of authorization for the disbursement of project funds, bad organizational arrangements, and mediocre coordination between the different bodies concerned. Sometimes, government structures deprive the project director of any real authority, and there is a complete absence of any involvement by the communities concerned.

27. All this is often due to the virtual absence of government support for regional and subregional development projects in the agricultural and rural sectors; such a situation means a lack of genuine support

from governments (in counterpart personnel, office staff, etc.); a lack of linkage with related programmes (seen here in the context of lack of coordination); a lack of political support (prices, wage-incentives, etc.); lack of help from supporting institutions or agencies in terms of extension services, agricultural credit and marketing because their performance which is often very poor has not been assessed beforehand and poor maintenance of the technical equipment needed for the projects.

(d) Technical and social aspects

28. The socio-technical aspects which should determine, for example, the potential of the project zone, are often overlooked in projects, not to mention the impat on the people concerned and the technical resources required. Indeed an assessment of the project's effects on social and human conditions in the community, particularly those affecting peoples' concerns and aspirations (such as land-ownership problems, access to appropriate technology, etc.) has not always been given priority in project design and implementation nor have the possible effects on the ecological environment, etc.

29. For these reasons, the majority of projects reveal a lack of interest in the small-scale farming or rural communities - considered more passive than active partners - by the international staff assigned to those projects and who are not in a position to encourage a different approach, being interested only in large-scale farming. Generally, such projects, seeking support for existing research, extension, credit and marketing institutions share the same lack of interest in the various groups within an agrarian society.

30. In this case, the principal beneficiaries are the big landowners who have easier access to credit and can more readily negotiate advantageous marketing agreements. They profit most from the advice made available when the results of research are published.

31. In the same way, the technical progress that should ensue from the projects is seen essentially in terms of a mere transfer of technologies. As a result, the problems in this area are usually identified by those who already have the technology, but often have no experience of the project zones.

32. The proponents of technology transfer have been incapable of critically assessing what appropriate technologies would be needed and have failed to evaluate their effectiveness in solving problems as actually perceived by the various groups among the people concerned. In fact, many technical problems, especially in organization and management, cannot easily or quickly be solved through external intervention.

33. Finally, new agricultural techniques are developed in research establishments where management methods and physical conditions are usually quite different from those in Africa. In Africa, the agricultural holdings are small and planned objectives rarely have the desired results for small-scale farmers who produce very little food or who remain landless.

(e) Environment

34. As far as aspects relating to the environment are concerned, ecological factors are often not clearly identified at the level of project design and execution; even now, the environment is not always given the importance it deserves in the design of agricultural and rural projects. For a long time the environment has even been considered an obstacle to development and this is why, for example, cash crop projects are often developed to the detriment of tropical rain forests and African ecosystems in general. Several hectares of forest have been destroyed to make way for the production of cash crops such as cocoa, coffee and vanilla which are not competitive, whose future is uncertain and whose world market prices are highly erratic and tend to be falling.

35. In other cases, notably on certain islands in the Indian Ocean, the projects are of subregional character and are planned in such a way that cash crops occupy the areas that are ecologically suitable for

food crops (at an altitude of 0 to 400 metres) while the shrubland and forest areas are given over to the traditional sector in which the great majority of the active population use the land for unprofitable and inappropriate subsistence farming. Thus the islands' ecosystems are disrupted. (5)

36. Another common form of environmental degradation which is often overlooked in project planning is the destruction or damaging of plant cover through overgrazing, overworking of the soil or deforestation. This exposes the soil to all sorts of rain and/or wind-related erosion. In fact, erosion is common in all of sub-Saharan Africa and without doubt, remains one of the most serious hazards. According to the World Bank report of November 1989, entitled "Sub-Saharan Africa: From Crisis to Sustainable Growth", in Ethiopia, a country with rampant population growth, the topsoil is being removed at the rate of 290 tons per hectare in places of steep gradient. In West Africa, there have been losses of 10 to 20 tons of soil per hectare, even on gentle slopes. (6)

37. With a few notable exceptions, African governments have worked in vain to combat soil erosion because soil conservation demands regular additional work on the part of the farmers who are often simply unable to do it.

38. In addition to all these phenomena contributing to the wastage of natural resources, there are also numerous large development projects in agriculture-oriented dam-construction for instance, which do not always take account of present and future climatic conditions and the impact on the ecological environment and natural resources, etc.

39. A quick study of two development projects undertaken by the organization for the Development of the River Senegal (OMVS) will serve to illustrate some of the above points - especially the failure to identify ecological and other factors accurately. (7)

B. An object - lesson from two dam-construction projects

40. From 1960 onwards, any farmland requiring irrigation was developed on the two banks of the River Senegal in Senegal and Mauritania. But as this river is deeply embanked and water had to be pumped up to the fields, a way was sought of damming the river course so that water would flow down to the crops.

41. It was envisaged that three dams would be constructed at Bakel, Cascas and Dagana. However, they could not have solved the main problem which was to control the flow of water and avoid the huge yearly fluctuations. Only a large dam would solve the problem. (8)

42. Therefore, in 1972, the three countries bordering on the river - Mali, Senegal and Mauritania - created the Organization for the Development of the River Senegal (OMVS), in order to regulate the flow of the river. The three main objectives were:

(a) To develop irrigated farming;

(b) To generate electricity for the countries concerned; and

(c) To guarantee year-round navigation as far as Mali.

43. Work began in 1981. The dam at Manantali was constructed in the territory of Mali on the main tributary of the Senegal, the Bafing. Its holding capacity is 10 thousand million cubic metres, although it is a relatively small lake dam by comparison with the dams on the Nile, where the volume of water is 15 to 16 times greater. The capacity of this dam should have made possible:

(a) Year-lround irrigation of 255,000 hectares of land between Manantalia and St. Louis;

(b) A permanent discharge in excess of 100 m³/second for navigation; and

(c) Annual generation of 800 GWH of electricity by the hydroelectric power station at the base of the dam.

44. A second dam with embankments on the two banks of the river between Diama and Rosso was constructed near the mouth of the river at Diama. It had large locks to prevent the penetration or backsurge of sea water upstream of the construction works during the dry season (similar to the flood barrier downstream of London on the Thames). In the past, as the lower course of the Senegal has a very gentle gradient, the effects of salt water used to be felt right up to Dagana, about 200 km in the interior. The combination of dam and embankments at Diama was intended to stop the penetration of salt water and also allow:

(a) The transfer of river water to Lake Guiers for a larger part of the year;

(b) A permanent supply of freshwater for the irrigated areas, townships and industries in the delta area; and

(c) Sufficient surface water to replenish Lake R'Kiz and L'Aftout-es-Sahel.

Characteristics of the Manantali Reservoir

	Next to the crest gate	At the maximum water level allowed when the reservoir is in service
Water level in metres (IGN)	208.00	187.00
Corresponding surface of the reservoir (km²)	477.00	275.00
Volume of water in the reservoir (m³)	11.3 thousand million	3.4 thousand million

Maximum useful volume = (11.3 - 3.4 thousand million m³ = 7.9 thousand million m³

Source: OMVS, 1986.

45. The dam at Diama was completed in 1986, and the one at Manantali in 1988. By the end of 1990, the reservoir was 65 per cent full. But the mere construction of dams has never automatically led to development. Therefore, the use of these dams should have been better planned, bearing in mind the original aims. (8)

46. Both dams together cost a total of CFAF 186 thousand million. A huge consortium of donors provided the finance, primarily Saudi Arabia and Kuwait, to the tune of 136 and 91 thousand million ECUs (European currency unit 1 ECU = 7 FF) respectively. The Federal Republic of Germany and France also contributed (73 and 55 million respectively) as did other Arab countries, including Iraq. (8) The resettlement of the inhabitants of the area flooded by the lake was planned meticulously and accepted by the people.

From the start, it was clear to all parties involved that they would need several hundred million ECUs more to finance the projects related to the dam construction, i.e., the electricity generating station, the works for making the river navigable and the irrigation canals.

Characteristics of the Diama reservoir shoreline
at 1.50 and 2.50 metres (IGN)

	Shoreline at 2m 50 (IGN)	Shoreline at 1m 50 (IGN)
Length of reservoir	360 km up to the region of Guede Boghe	380 km up to the region of Boghe Cascas
Width of reservoir	0.3 to 5.0 km	0.3 to 5.0 km
Internal surface area of reservoir	235 km²	440 km²
Volume of water stored	0.25 thousand million cubic metres	0.58 thousand million cubic metres

Source: OMVS, 1986.

47. But meanwhile there has been a deterioration in the climate (lack of rainfall, drying up of the land, etc.) thus raising two fundamental issues, namely:

(a) The impact that the development projects under the programme for the development of the river Senegal will have on the environment and natural resources of the Senegal river basin; and

(b) The impact that these projets will have on the social and economic well-being of the inhabitants of the Senegal river basin.

48. At present, the question is whether the Senegal River has any future as a navigable waterway. According to some experts, the dredging of a navigable channel and the construction of river ports would require huge sums of money which could not be justified by the relatively small amount of freight, not to mention the fact that the sea port of St. Louis where goods would be reloaded is silted up at present and would need a complete overhaul to meet modern requirements. (7)

49. Obviously the generation of electricity by hydropower stations is an option for the future, because at present almost all electricity production in the countries bordering on the Senegal river depends on oil. Recent developments in the Gulf and their subsequent effects on oil prices have shown how dangerous such dependence can be. The question is whether hydropower is the best solution or whether a new energy policy should be considered, given the fact that poor rainfall makes the flow of the Senegal river unreliable. (8)

50. An attempt has been made to answer these questions in the OMVS report concerning evaluation of the environmental effects of the planned development of the Senegal river basin. According to this report, one thing is clear: not only is the comprehensive evaluation of the environmental impact of the OMVS programme mostly negative, but also, these days few funding agencies would fund large-scale projects such as these. Micro-projects are now the order of the day. The "post-dam" studies say the spending must stop.

51. In the final analysis, according to the magazine, Development and Cooperation, No. 3/1991, the most important project for the future of the region is still irrigation. Before the dams were built, there were

more than 30,000 hectares of irrigated land in each of the countries bordering the river, and in Mali in particular. This figure should rise to more than 375,000 hectares; but, from the start, the planners believed that it could only be achieved in the long-term - the planning documents from the early 1980s mention a period of 40 to 100 years. (8)

52. Another example of a dam-construction project for hydroelectric purposes comes from the development of the Tatinga Falls on the island of Anjouan, in the Comoros Archipelago. Excellent feasibility studies were conducted by the funding agencies, but just as the project was about to begin, it was realized that the Tatinga river had run dry. The main reason was excessive deforestation upstream. Meanwhile it is the Comoros which must cover the cost of these "marvellous studies" which failed to consider all the ecological factors. (9)

II. POSSIBILITIES OF IMPROVING THE EFFECTIVENESS OF AGRICULTURAL AND RURAL DEVELOPMENT PROJECTS

A. The need for a suitable policy framework

53. By working with projects which had been designed and executed within a set general policy framework which placed particular emphasis on the environment and sustainable development, many errors could be avoided, especially those mentioned above. In other words, projects must be fully integrated into a comprehensive development plan and will then reinforce and complement a programme which already exists or is being designed.

54. Until now, many African countries have tried to undertake agricultural and rural development projects based on large-scale programmes like that of OMVS. Whether they have had a positive impact on the environment, natural resources and the social and economic well-being of the people is highly uncertain. Other projects are based on macroeconomic reform programmes advocated by the World Bank and the International Monetary Fund. Despite considerable care at the formulation stage, these programmes have too rigid an approach and are not always directed either towards closer regional cooperation or towards the protection of vulnerable and impoverished groups. Care must be taken to ensure that social, macroeconomic and agro-ecological policies all work together to catalyse progress in the agricultural and rural sectors.

55. At the moment, Africa does have a theoretical and empirical framework to enable projects and their respective programmes to be formulated correctly. The African Alternative Framework to Structural Adjustment Programmes for Socio-economic Recovery and Transformation (AAF-SAP) which has adopted in April 1989 by the Joint Conference of Ministers of Finance and Planning, and subsequently by the Assembly of Heads of State and Government of the OAU in July 1989 and focuses, to a large extent, on the socio-economic recovery and transformation of Africa. (10)

56. To operationalize this alternative framework, a number of appropriate policy instruments together with modalities for their application have been prepared by ECA and proposed to African countries. They include a system of multiple exchange rates, differential interest rate policies and selective credit control and price support policies for achieving food self-sufficiency. (11)

57. Together with these policy instruments, AAF-SAP is recognized as a consensus between African countries and their major bilateral and multilateral development partners, more specifically the Bretton Woods Institutions. Both the IMF and the World Bank acknowledge that adjustment can only go hand-in-hand with transformation. Accordingly, in the long-term perspective study carried out in 1989 on "Sub-Saharan Africa: From Crisis to Sustainable Growth", the World Bank recognizes this fact categorically and undisputably as did the Maastricht conference on Africa organized in July 1990 in the Netherlands. (12)

58. That having been said, AAF-SAP seems to be a frame of reference well suited to the designing and the implementation of subregional and regional development projects. It raises hopes for Africa by presenting appropriate policies and measures that should enable the countries of this continent, not only to adapt themselves to a changing economic situation, but also to take the necessary action for the recovery and/or the transformation of their economies without, however, neglecting sustainable development and the protection of the environment.

59. Other frameworks or structures exist that have often emanated from supreme African legislative organs. A case in point is the regional conference of African Ministers of Agriculture which met at Yamoussoukro, Côte d'Ivoire, in 1986 and adopted a plan of action for African agriculture based on an in-depth study conducted by FAO in cooperation with African ministries of agriculture. (13)

60. This plan deals with the national, subregional and regional development of African agriculture over the next 25 years. In essence, it advocates a fundamental change in policy structure, priorities and national planning with a view to developing the food and agriculture sector, substantially improving the situation with regard to inputs, incentives, institutions and infrastructural facilities, implementing strategies for the reclamation of land and soil protection and providing African Governments and farmers with dynamic international support.

61. Finally, mention can also be made of the Den Bosch Declaration and Programme of Action emanating from the FAO/Netherlands Conference on Agriculture and the Environment which was held at S-Hertogenbosch, the Netherlands, from 15 to 19 April 1991, as well as the FAO follow-up project to this conference which takes the form of a programme providing a framework for international cooperation in agriculture and sustainable rural development. [1]

62. It should be noted that such seminal documents as AAF-SAP and the African Charter for Popular Participation in Development and Transformation and even the Programme of Action of the World Conference on Agrarian Reform and Rural Development reflect the Yamoussoukro Plan of Action for African Agriculture. In other words, they provide a working framework which could be of immediate use as a guide for designing and implementing subregional and regional development projects in the agriculture and rural sector with particular stress being laid on the environment and sustainable development.

63. Obviously, most initiatives aimed at transforming the agriculture and rural sector in African countries must come from the Governments themselves. Their intervention, however, should bring about changes that foster the introduction of new ideas and technologies and promote the provision of training and services at the subregional and regional level without neglecting the major beneficiaries in the rural areas.

64. In greater awareness of the role of governments than of the structure of farming and rural societies, development activities have often been confined merely to the ambit of the specific ministry dealing with a given project. Often, account has not been taken of the priorities and strategies which directly affect the potential of a specific project to make a valid contribution to agricultural and rural development as a whole.

65. It would therefore be appropriate to analyse government strategies and policies in order to see the extent to which they can influence project design, determine the economic viability of programmes and shape the sharing of project benefits among all members of society, particularly rural communities. AAF-SAP and the other Plans mentioned earlier can adequately assist in achieving these objectives.

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[1] Report of the FAO/Netherlands Conference on Agriculture and the Environment, S-Hertogenbosch, the Netherlands, 15-19 April 1991.

66. There are other possible ways of enhancing the effectiveness of subregional and regional development projects in the agriculture and rural sectors which focus not only on a suitable policy framework but also on measures aimed at:

(a) Improving market studies

67. Market studies should take place within a properly defined framework that is well targeted at satisfactory local and external outlets. The market must be large enough to absorb the products of the planned project.

68. If the project aims to produce for export, the specific conditions of the international market with regard to preferential treatment, long-term contracts, quality preferences, competition and other factors must be analyzed.

69. Domestic and external pricing policies must be comprehensively analyzed, debated at length or substantially modified during project implementation. Market studies must be based strictly on local market potentials. In other words, it should be integrated into the ancillary or development programme and fall within a properly circumscribed framework.

(b) Improving and strengthening project linkages with ancillary programmes or other sectors

70. To illustrate this, take the example of an agricultural extension project concerning a specific subregion. In such a case, the project may be linked to a development objective or ancillary programme such as the enhancement of food production within a properly defined framework.

71. The immediate objective of the project could relate to the training of extension officers, the improvement of administrative procedures or planning methods, the introduction of a system for controlling local agents, the training of farmers, the provision of support to sectoral or subsectoral or training for women or youth organizations. All these immediate objectives aim at development or an ancillary programme relating to the increase of food production.

72. Rarely can one project cover the entire range of immediate objectives or possible measures to be taken within a given ancillary programme. In order to make the best choice among the various immediate objectives possible, an in-depth analysis should be conducted on the ancillary programme, the scope of activities planned, the magnitude of financial resources, the expertise of national staff and existing general policy constraints.

73. Project formulation will accordingly require a change of orientation and care must be taken to keep away from the current conception of placing emphasis almost exclusively on the project objective, inputs and activities alone. Benefits will accrue to the extent that the immediate objective of the project and its implementation are related to those of the ancillary programme as a whole. This would clarify the scope and nature of activities carried out under the project and the inputs needed in order to attain the development objective.

74. Still within the example of the agricultural extension project, it would also be important to consider the following intersectoral linkages which directly relate to the environment, the family, the community and society as a whole.

(a) Among other things, the linkage of the project with the general level of education among the farming population will affect the selection of the means of communication, the capacity to participate in research development activities, the attitude of educated youth towards the farming profession and the extent to which rural women can be persuaded to participate in the improvement of rural society;

(b) Regarding the project linkages with health and nutrition, it should be observed that the health of the people is in part related to the availability of food and of water, not only for sanitation but also for livestock raising and irrigation. Measures to protect human and animal health can be indispensable to the adoption of new ideas in farming and, as in the case of education, they can also be a way of securing the support of the local community before tackling the problems of farming itself;

(c) The linkages with the spatial distribution and density of the population will determine how extension networks are designed and service centres located. Existing migration patterns and data on fertility rates will indicate the future characteristics of the rural population and such information can be used for long-term planning;

(d) Linkages with agro-based industrial prospects, planned employment capacity and details on local manufacturing potential are also factors that deserve to be taken into consideration; and

(e) Equally important in the design and implementation of projects are the linkages with farming society or the environment, any extension operations, existing farming systems, the systems of land ownership, domestic economic data, attitudes to change, environmental and cultural characteristics, local organizations and the social stratification of people by politics, wealth and income.

(c) Effective project management, improvement of the administrative apparatus and government support

75. The idea of effective project or programme management is based on participation. Indeed, experience has shown that such management could be entrusted to decentralized local administrative agencies, communities or non-governmental organizations directly involved in the project. The centralized technical agencies should only provide advice, support and equipment to projects managed on a decentralized basis. As an illustration a World Bank report of 1989 on the Rural Piped Water Programme in Malawi has it that this is one of the most successful water supply programmes in Africa and could well be replicated in other African countries. (14)

76. This programme is based on strong popular participation with limited but well-defined State involvement. It began modestly with techniques that were easily understood and maintained by the population and then was gradually expanded in light of accumulated experience and the lessons learned about programme design and the use of appropriate technologies. The success of the programme comes from the fact that the State assumed responsibility for training the community members who worked on the programme. It also provided the seed money, set standards and assumed technical responsibility for hydrological surveys, project documentation, provision of equipment and the monitoring of the system.

77. In this effort at decentralized management, women's participation had pride of place since, in Africa, women play a more active role in agriculture than anywhere else in the developing world. In the case of the rural pipe water programme, women provided more than half of the voluntary labour required to implement the programme, and more than two-thirds of the members of the committee responsible for maintaining stand pipes were women. Ten per cent of the planning committees, which decide on the assignment of responsibilities and planning, and 10 per cent of the repair teams were also women.

78. Wider powers must be entrusted to people managing the project: they must have every latitude for modifying the activities implemented and changing the inputs to match the situation as it occurs. Less stress should be laid on achieving immediate results and more emphasis placed on what should be achieved in the long term, on the strengthening of peoples' capabilities and other such factors that cannot be measured in the short term. Project follow-up and evaluation requires more subtle methods, and beneficiaries should participate in evaluating the impact of the project and the programme.

79. The proper functioning of programmes or projects, from the viewpoint of administrative efficiency, requires an administrative mechanism which functions properly and which can provide the coordination, leadership and support required. Hence, there should be horizontal integration, particularly at the village and community level in order to maximize the synergy between the various effects of the project. In the rural piped water programme, success encouraged public health officials to institute complementary health programmes that ensured that the improvement in water supply had tangible effects on the health situation.

(d) Protection of the environment and rural communities

80. While particular emphasis must be given to the environment and sustainable development, four main interrelated factors deserve consideration and should be given very special attention in the formulation of subregional and regional development projects in the agriculture and rural sector. These are climate, living and non-living natural resources, the agro-system and farming systems and technology.

81. Indeed, the influence of climate, which is responsible for soil formation and for determining the living environment, is often neglected in development-project analysis even though, more than any other factor, it is responsible for the type of agrarian life or farming environment. It can all too easily be forgotten that most African countries are situated in a stretch of land limited to the north by the Tropic of Cancer and to the south by the Tropic of Capricorn, in humid equatorial, dry tropical and monsoon zones. This fact alone explains the vast differences between the initial conditions faced by African countries and the pre-industrial development phase experienced by the rich countries during the last century.

82. In his book on the effects of weather on economic development, Kamarck demonstrates how necessary it is to make far more substantial development efforts in the tropical regions than are made in temperate regions in order to achieve similar results. (15)

83. The importance of natural resources from the viewpoint of sustainable development is beginning to be duly recognized in Africa. The main characteristics of natural resources lie in their potential use. This is basically a dynamic and changing concept which is determined by the pattern of mankind's needs, his technology and the choices made in order to meet those needs. In this regard, natural resources constitute the basis of the production system.

84. It can therefore rightly be emphasised that various natural resources are interdependent. Because of the linkages between them, the changes made in some may have repercussions on the others. Studies on the overall situation are therefore indispensable because nature is a gigantic living organism and anything affecting one of its elements changes its balance by equally affecting the other elements.

85. The development of one type of resource often enables another to be developed, as in the case of deforestation or reforestation where the repercussions can influence the climate, the water cycle, soils, plants and animals. Care should be taken not to disturb the natural balance, because the same deforestation can have the effect of creating new deserts, and tampering with nature's own controls can lead to the proliferation of predators or parasites.

86. It is highly possible that natural resources, even when they have taken relatively stable form, undergo changes over a given period. In many cases, the resources might be changed by natural processes. In contrast, all natural resources are susceptible to change by man who is, in every age, aware of their existence and uses them as he will. Should he use them wantonly, he runs the risk of destroying them and any negligence may well have disastrous consequences.

87. If we take the specific case of soil, soil fertility and water, they appear to be the most important bases of agricultural production and rural development. Their development and use should be conducted carefully given the fact that in Africa very serious cases of erosion and leaching are occurring. Rainfall

varies considerably and unpredictably. In some places, there is too much and it is torrential while in others, there is too little, resulting in chronic and acute water shortages.

88. Hence, the need for studies that would lead to the planning and large-scale development of river basins to save and regulate water resources and to control floods: and for irrigation and drainage methods and practices to improve water use and management. Very often, this is what applied research and training involves.

89. In most countries, there is still vast potential for irrigation development by which crop yields might be increased. The only problem is the field work and evaluation of available water resources as to whether in practice they are suitable for agricultural use. This is why studies have to be conducted beforehand to ascertain the actual and continued existence of surface and underground water.

90. The high rate of evaporation results in growing salinity in irrigated soils unless the water is carefully controlled and drainage facilities (which happen to be very costly) are available. This leads to consideration of related areas which form an integral part of water resources development, namely the preparation of topographic and aerial maps, applied geology, irrigation research, the drying of swamps and soil improvement, studies on soil salinity and alkalinity, rural water supply and the desalination of salty water.

91. Accordingly, the study and knowledge of natural resources, particularly those directly affecting agriculture (soil, water and forest) as well as their possible variation and reciprocal relations or influences must be given pre-eminence in project preparation.

92. The agro-system happens to be the oldest known ecosystem that has been studied and set up by rural folk. Once plants and animals were domesticated, it became vital for farmers to secure the best returns from their lands by rotating their crops as necessary, conserving humus and recycling organic nutrients through agro-pastoral balance. Since the forest also provided part of the resources of agriculture, mention can be made of sylvo-agro-pastoral balance or SAP as a future of properly managed farming.

93. In fact, the agro-system is an entire biogeocenoses which is incorporated into the agricultural system, in its turn related to a food chain within a defined region or ecoregion. (16) The agro-ecosystem unit is usually the farm whose size varies widely and ecological organization depends on the farming plan established by the farmer. This involves the selection of species, crop rotation, manuring, carbon recycling and organic elements left by cattle in their droppings over the range. Having said that, project preparation should strictly take the sylvo-agro-pastoral balance into account.

94. Systems of farming should be considered in the preparation of projects and studies. They should be perceived integrally rather than as isolated systems since they reflect an integrated response to the environment, the needs of the agricultural family and division of labour and to the social organization in force. Historically, the farming systems are the main agricultural types which succeeded each other during the development of the human population: harvest, extensive cattle rearing, farming on patch soil (often long and forest fallow), extensive arable system (ploughing and short fallow of weed), irrigation or dry farming system, enclosed agricultural/livestock self-sustaining system (animal as driving force and producer of fertilizers) open intensive agricultural system (tractors and chemical fertilizers).

95. For instance, in the humid forests of West Africa, coconut, cocoa and perennial plants such as cassava, yams and bananas are cultivated using relatively rudimentary techniques that necessitate man's effort and the use of simple tools. Harvests are guaranteed by the simultaneous farming of varieties with varied needs in humidity and soil quality and which are resistant, in various degrees, to drought, wind and parasites. Incomplete sowing and insufficient weeding due to the limited number of tools that the African farmer has at his disposal, provide shade, protect plants and contribute to natural reafforestation. It is easier

to cultivate small isolated farms than extensive areas overgrown with natural vegetation; at the same time, this helps to check the spread of plant diseases.

96. At the moment, a farming system is a type of an agro-system extended to an ecoregion. It reflects the response of the rural agricultural household (main rural production unit) to climatic conditions, availability of natural resources and environment, through the use of techniques that have developed over the centuries. For instance, the technique which, over the years, has been used in selecting varieties of indica rice in the African tropical regions, shows how the best had been derived from local conditions.

97. In situations where the soil is poor or where heavy odds must be battled to obtain minimum yields, this plant has provided a well-adapted solution as a result of the height of its stalk above the water level, of its insensitivity to variations in soil nutrient and its late maturing after the rains. The plough designed, for instance, by the farmer in the savannah regions helps to preserve soil humidity and can be drawn by very ill-nourished cattle. Mention can also be made of the wheel to pump water, a hoe, a spade and a sickle. Rice cultivation in the rainy season is alternated with the cultivation of pulses, wheat and groundnuts during the dry season (17).

98. The preparation of projects should lay special emphasis on technology since it is both a means to generate new income and an instrument for socio-economic and ecological change. In most cases, increased productivity depends on the application of improved techniques that can be considered as know-how derived from scientific knowledge and incorporated in an object, a process or an activity.

99. Technology in rural development can be seen in the new variety of seeds, in new cultivation techniques or construction methods; it corresponds to knowledge needed in the management of a farm, in the organization of a cooperative union, or in the establishment of a primary health care system. Distinctions can be drawn between the "hardware" (visible products and machines) and the "software" (experience, education and organizational forms).

100. Though techniques play an essential role in the area of rural development, they are mainly associated with production and productivity problems, particularly, in agriculture. In this sector, there is always an opportunity to improve the management techniques of farms and the use of better cultivation practices, to use new varieties of seeds and cattle breeds, electrical and mechanical equipment, herbicides, pesticides and chemical fertilizers, to expand irrigated areas and manage water resources, and to adopt new methods for the processing, storage, transport and marketing of agricultural products.

101. However, the introduction of new techniques in the use of seeds and fertilizers for the cultivation of high-yielding varieties of cereal staples has increasingly led farmers, for instance, to abandon traditional farming methods. The use of chemical fertilizers, pesticides and energy (fuel) for irrigation increases needs in production factors whose acquisition is necessary, coupled with the cost of seeds; furthermore, since organic fertilizer-based agriculture had been generally neglected, dependence on industrial production increased. In another connection, it is necessary to learn techniques used in weeding, watering, thinning out and planting of seeds, and in the application of fertilizers.

102. If new techniques are to be fully used at current factor costs, more spending and working capital will be needed to acquire fertilizers and pesticides, traction power for tilling the soil, and manpower for weeding. Consequently, an invasion of parasites, a breakdown in the irrigation network or a drought period entail a loss not only of crops but also of capital. Effects of failures are increasingly felt and small-scale farmers, for fear of having to sell their land to pay their debts, are, in general, less enthusiastic to take the risks associated with any change in methods.

103. Indeed, the green revolution has increased production but it has failed to improve income distribution. Everyone admits that it is necessary to increase agricultural production and productivity, but

then Governments seeking to increase production by encouraging the cultivation of high-yield varieties must be aware of the effects of such a choice on their own domestic or subregional market and income distribution. (18)

104. Advantages of techniques recommended by the green revolution can be briefly summarized as follows: increased yield (particularly of wheat) to twice that of traditional varieties; shorter cropping cycles make it possible, in rice cultivation, to economize water, and, in the case of wheat and rice, to reduce the quantity of water needed by a unit of area; shorter cycles make it possible to cultivate many crops, thereby, economizing land; many crops increase manpower demand per unit of area, and as a result, job opportunities in the agricultural sector (unless this positive effect diminishes due to mechanization); scale neutrality (as a result of the possibility to use less of such inputs as of seeds, fertilizers, pesticides and water) makes it possible to easily disseminate techniques to small- and large-scale farmers.

105. Preference for high-yield varieties highlights the relations that can exist between techniques, on the one hand, and the structure of the society and economy, on the other hand. It was clearly proven that unequal revenue in the rural sector has increased during the period corresponding to the introduction of new techniques as well as land concentration, the number of farmers without land and employment, and that the living conditions of the poor rural population have worsened.

106. Extensive research was conducted to determine if, and to what extent, the new techniques were responsible for these trends, and what was the contribution of other factors such as increased population, government policies, imperfect markets and structural problems. It is not yet possible to give clear and generally accepted answers to these questions; some common conclusions have been reached, one of which is the importance given to rural development targeting the poor sectors of the population.

107. Having limited credit facilities, limited technical knowledge and means of production the poor cannot take risks or innovate as easily as those with more land and capital. In the absence of Government intervention, the large-scale farmers who are more prosperous and educated innovate first and then farmers of the intermediate group follow suit. The poorest groups only follow much later unless the Government intervenes in their favour.

108. Land ownership encourages investment. At the same time, it is the main factor that determines the capacity to borrow. It is necessary to have ready cash so as to buy necessary production factors, as well as to choose the most favourable moment to buy or sell and to take risks. Educated farmers have easy access to information on new techniques, Government services and institutionalized credit facilities. In other words, if scale neutrality is possible at the level of techniques per se, the same does not apply to institutions with which the farmers deal.

109. It has therefore been said that new techniques favour land owners. Since Governments are essentially interested in increasing agricultural production, they have paid more attention to technical developments which have favoured land owners. It has been amply proven that it is easier, administratively, to deal with a small number of large-scale farmers than with a multitude of dispersed small-scale farmers. Civil servants also tend to take account of the economic and social status that large-scale farmers enjoy in their local community, more so as they often have family or caste relations with them.

110. Extension workers have objectives to accomplish, for example, concerning the area to be cultivated by using high-yield varieties, or to be formed by providing techniques to a small number of large-scale farmers. "Capitalizing on the most powerful" was thus a common policy. From now on, "Capitalizing on the poorest" must become a productive objective and such an objective must be attained through projects, from their design to execution.

111. New agricultural techniques must be designed to meet the needs and living conditions of the poor rural population; it is possible to determine the characteristics of a desirable rural environment (increased productivity, increased job opportunities throughout the year and the equitable distribution of profit) and to plan research/development activities.

112. New agricultural techniques introduced in Africa are those that increasingly use non-renewable energy resources, in particularly fossil fuels for the manufacture of chemical fertilizers and pesticides, and are also used to power irrigation schemes and agricultural machinery. Most African countries have to import these resources whose prices on the world market have increased tremendously. (19)

113. The question of knowing whether a technique is useful in rural development or only worsens the situation of the rural poor, will be largely determined by the social set-up within which the new techniques are applied. Hence there is a need for a framework within which subregional and regional development projects must be integrated in the agricultural and rural sector.

IV. CONCLUSION AND RECOMMENDATIONS

114. The report just considered has tried to analyze certain deficiencies noticed in the classical framework of the designing, execution and assessment of agricultural projects. Essentially, these deficiencies concern:

(a) The fact that the projects are limited in time and place and are not executed within a suitable development policy, and that such projects have no links with existing related programmes or other development sectors;

(b) Incomplete market studies whose only concern is the external and not the local market;

(c) The absence during project preparation of a clear identification of those ecological factors which play a vital role and which it neglected, result in a deterioration in the ecosystem as a whole;

(d) The lack of interest in small-scale farmers and the nation that the technical progress channelled through the projects is essentially considered as a mere transfer of technology; and

(e) The absence of Government support, coupled with inadequate administrative procedures, poor management and lack of coordination, and often a poor calculation of the costs, etc.

115. In order to illustrate some of these deficiencies, the report mentions some examples of projects designed which are more or less being carried out in places on the African continent. This is the case in particular with the dam construction projects in West Africa implemented by the Organization for the Development of the Senegal River (OMVS) and the hydroelectric project in the Anjouan island in the Comoros.

116. These projects, in spite of their excellent feasibility studies at the theoretical level, have not always taken account of ecological factors considered vital today.

117. On the basis of these established facts, possibilities to increase the effectiveness of subregional and regional development projects in the agricultural and rural sector, with special emphasis on problems relating to the environment, not only concerning the socio-economic and human aspects but also and above all, the ecology, are examined. Thus, the report stresses:

(a) The need for a framework such as the African Alternative Framework to Structural Adjustment Programmes for Socio-economic Recovery and Transformation (AAF-SAP), FAO regional food programme for Africa (AFPLAN) or the Plan of Action of the Regional Conference of African Ministers

of Agriculture, Yamoussoukro, 1986, etc., in which the projects are to be integrated; both AAF-SAP and the Programme of Action of the World Conference on Agrarian Reform and Rural Development, reflect the Yamoussoukro Plan of Action for African agriculture. This is a very useful operating framework which can directly serve as a guide for the designing and execution of subregional and regional development projects in the agricultural and rural sector and which recommends sustainable development while giving due consideration to environmental protection;

(b) That improved market research should be integrated in a well-defined framework, which properly targets satisfactory outlets at both the domestic and external levels. The market must be sufficiently large to absorb export products from planned projects. If it is a project for export products, it will be necessary to examine special conditions governing the world market such as preferential clauses, long-term contracts, quality preferences, competition, etc. A local and external pricing policy must be fully analyzed, lengthily discussed and considerably modified during project execution. Finally the market study must strongly rely on the potential local market; in other words, the study must be integrated in the related or development programme integrated in a suitable framework;

(c) Improvement and strengthening of links between projects and ancilliary programmes or other sectors;

(d) Rational management of projects through the participation and improvement of the administrative apparatus and genuine government support;

(e) Protection of the environment and rural communities. Here, four main interdependent factors which require studies and particular attention in the preparation of agricultural and rural development projects, were examined. These factors are climate, non-living and living resources, the agro-system and farming systems and technological resources.

118. This report, above all, maintains that the impact and the interaction of these factors should be taken into account in the preparation of projects; as a matter of fact, it is necessary to first evaluate the initial situation by drawing up an inventory of available resources: natural physical and biological resources, including plant and forest cover, as well as their quality and method of use; financial resources and finally, human resources, i.e. the participation level of the population concerned; climatic effects on development.

119. The combination of these basic factors makes it possible to determine the potential of sustainable agricultural and rural development. Therefore, projects must be designed on the basis of this combination, the mastery of which can be enhanced by modern methods and techniques.

120. All projects concerning Africa should take account of the fact that this continent is confronted by two major trends, namely population explosion and the rapid deterioration of the ecosystems, and that certain "renewable" resources are, indeed, not automatically renewed; for instance, the soil may become impoverished and even depleted as a result of uncontrolled farming.

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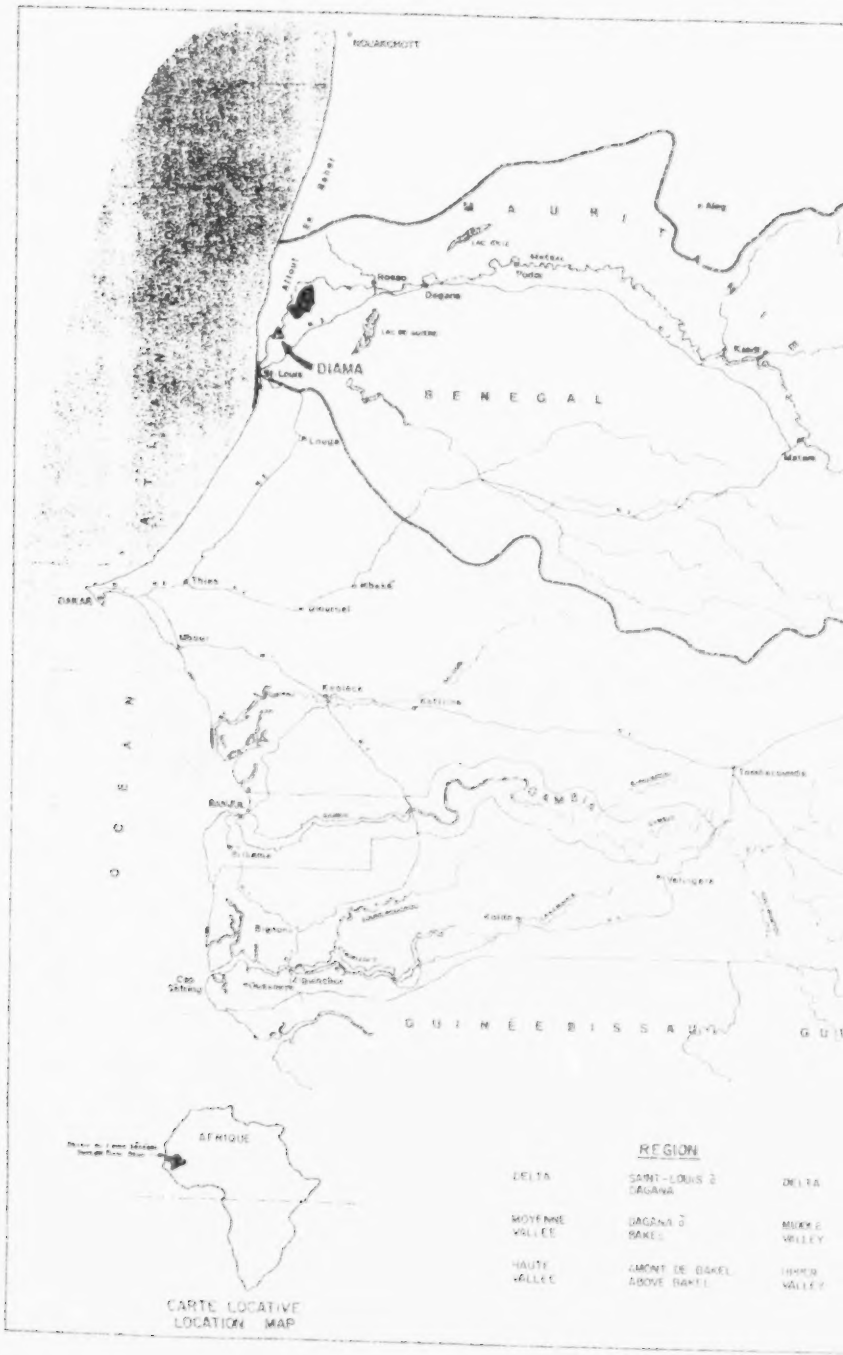
NOUAKCHOTT
MAURITANIE
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Kaffrine
Tambacounda
Kolda
Ziguinchor
Cap Skirring
GUINEE BISSAU
AFRIQUE
REGION
DELTA
SAINT-LOUIS À DAGANA
DELTA
MOYENNE VALLEE
DAGANA À BAKEL
MIDDLE VALLEY
HAUTE VALLEE
AMONT DE BAKEL
ABOVE BAKEL
UPPER VALLEY
CARTE LOCATIVE
LOCATION MAP

BASSIN DU FLEUVE SENEGAL
SENEGAL RIVER BASIN